Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of Parts 2 and 15 to	)	ET Docket No. 93-1
Prohibit Marketing of Radio Scanners	)	
Capable of Intercepting Cellular	)	
Telephone Conversations	)	

COMMENTS OF THE CELLULAR TELECOMMUNICATIONS INDUSTRY ASSOCIATION

The Cellular Telecommunications Industry Association ("CTIA") hereby submits its comments on the Notice of Proposed Rulemaking ("Notice") in the above-captioned proceeding. CTIA is the trade association of the cellular industry. Its members include over 90 percent of the licensees providing cellular service to the United States and Canada. CTIA's membership also includes cellular equipment manufacturers, support service providers, and others with an interest in the cellular industry. CTIA and its members have a direct and vital interest in the outcome of this proceeding.

Introduction and Summary

In this docket, the Commission has proposed rules to implement Section 403(a) of the Telephone Disclosure and Dispute Resolution Act ("Act").[1/] Section 403(a), which adds Section 302(d) to the Communications Act of 1934, bars the manufacture or importation of scanning receivers that are capable of receiving cellular transmissions or are readily alterable

[1/] Pub. L. No. 102-556, Oct. 28, 1992.

by the user to receive such transmissions. Section 302(d) also bars scanning receivers from being equipped with digital-to-analog converters.[2/]

Section 302(d) was enacted to protect the Federally-recognized privacy rights of cellular telephone customers[3/] by preventing manufacturers from designing scanner equipment that "allow[s] users [of such equipment] to listen to cellular calls."[4/] The Commission correctly interprets this statutory mandate broadly, by proposing not to confine the term "readily altered" to a predetermined list of modifications[5/] and by requiring absolutely that scanning receivers must be "incapable of converting digital cellular transmissions to analog voice audio."[6/] CTIA also strongly supports the Commission's

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[2/] See 47 U.S.C. § 302(d)(1)(C); see also H.R. Rep. No. 207, 102d Cong., 1st Sess. 31 (reprinted in 138 Cong. Rec. S17121 (daily ed. Oct. 7, 1992) (Statement of Sen. Pressler)) ("House Report") ("[t]he bar on scanners equipped with digital-to-analog converters that work in the cellular bands is intended to ensure that the additional privacy protection afforded by the conversion of cellular systems from analog to digital transmission is not undermined"). The conversion from analog to digital transmission affords cellular subscribers additional privacy because, so long as there is no voice decoder, a scanner tuned to a digital cellular channel will receive only unintelligible noise.

[3/] See 18 U.S.C. §§ 2511, 2512.

[4/] 138 Cong. Rec. S17121 (daily ed. Oct. 7, 1992) (statement of Sen. Pressler); see also 137 Cong. Rec. H6755 (daily ed. Sept. 24, 1991) (statement of Cong. Markey) (purpose of provisions is to "safeguard the privacy of cellular communications").

Congress clearly intended Section 302(d) to apply only to the manufacture and importation of "scanning receivers" as that term is defined in the Commission's rules. See 47 U.S.C. § 302(d)(1) (specifically referring to Part 15 of the Commission's rules). Excluded from the Commission's definition of "scanning receiver" are "[r]eceivers designed . . . for operation as part of a licensed station." 47 C.F.R. § 15.3(v). Thus, the Act would not restrict the manufacture or importation of cellular mobile units that may be programmed in a maintenance mode to scan different cellular frequencies.

[5/] See Notice at Appendix A, Proposed Section 15.121.

[6/] Id.

proposal to deny equipment authorization to frequency converters that tune, or can be readily altered by the user to tune, cellular telephone frequencies.[7/]

Consistent with the statutory goal of protecting the privacy of cellular communications, CTIA respectfully suggests several modifications to the proposed rules. To avoid disputes and confusion over what constitutes a "readily alterable" scanner, the definition of "readily alterable" should be a generic one that prohibits reliance on any component or device external to a scanner's microprocessor chip to block cellular frequencies. Because such external components and devices are ineffective "blocks," the chips themselves should be designed to prevent scanners from tuning cellular transmissions. The chip, in turn, should be made difficult to detach from the board. Likewise, converters should be denied equipment authorization unless they also contain a microprocessor chip that blocks cellular transmissions and is not easily detachable from the board. Finally, in addition to pledging their compliance with the Commission's new rules, applicants for equipment authorization must be required to explain why their equipment cannot be readily altered to receive cellular frequencies. Such a requirement will significantly enhance the Commission's ability to enforce its new rules.

I. Unless a Scanning Receiver Contains A Microprocessor Chip That is Designed to Block Out Cellular Frequencies and is Difficult to Detach From the Circuit Board, the Receiver is Capable of Being "Readily Altered"

As the Commission is aware, most scanning receivers are equipped with microprocessor chips that are capable of receiving cellular transmissions. While some

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[7/] Id.; see also Notice at ¶ 10.

manufacturers have attempted to defeat the receipt of cellular frequencies by adding "blocking" devices to their scanners, these efforts have been ineffectual. These blocking devices can be easily altered or removed from the receiver to restore its ability to tune cellular transmissions. In fact, magazines published by so-called "hobbyists" contain instructions for making such modifications.[8/]

Congress clearly intended to prevent these modifications by directing the Commission to deny equipment authorization to *any* scanner that is capable of "readily being altered by the user to receive" cellular transmissions.[9/] CTIA proposes that "readily altered" be defined generically as follows:

> Receivers and converters capable of "readily being altered by the user" are those that rely on any component or device other than the firmware of a microprocessor chip that cannot be easily detached from the circuit board to prevent the receipt of transmissions in the restricted bands.[10/]

Since any components or devices external to a receiver's chip can be altered or modified without difficulty (particularly given the wide availability of instruction manuals), such a broad, generic definition is necessary to fulfill congressional intent. The Commission's proposal to define receivers capable of being "readily altered" by referring to specific components or devices (such as diodes) and stating that the definition is "not limited to"

[8/] See, e.g., Monitoring Times, November 1989, at 88; Popular Communications, June 1991, at 78 (advertising numerous scanner modification manuals).

[9/] 47 U.S.C. § 302(d)(1)(B); see also House Report at 31; 138 Cong. Rec. S17121 (daily ed. Oct. 7, 1992) (statement of Sen. Pressler).

[10/] Note that this definition of "readily altered" would also apply to converters used with scanning receivers. See pp. 7-8 at infra.

receivers with such devices[11] will likely invite disputes and confusion later over which external devices are covered by the rule. This potential for argument and confusion renders the proposed definition inadequate to prevent the authorization of scanners with easily-altered "blocking" components or devices not specifically listed in the rule.

Under the generic definition that CTIA proposes, scanning receiver manufacturers would be required to block cellular frequencies in the firmware[12] of the microprocessor chip itself.[13] As the Commission recognizes, the most effective way for scanner manufacturers to accomplish this is to use microprocessor chips that are designed to not receive cellular transmissions in the first place.[14]

Even if the chip itself is designed to prevent a scanner from tuning cellular frequencies, the scanner remains capable of being "readily altered" if the chip can be easily removed from the receiver's circuit board. If it can be removed from the board, the chip can be replaced with another chip that permits cellular coverage. Alternatively, where the

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[11] See Notice at Appendix A, Proposed Section 15.121.

[12] "Firmware" consists of "[p]rograms kept in semipermanent storage, such as various types of read-only memory." H. Newton, The Telecom Dictionary, at 239 (1989). It "contains software which is so constantly called upon by a computer or phone system that it is 'burned' into a chip." Id. Firmware programs can be altered only with difficulty.

[13] We are aware that some scanning receivers are manufactured without microprocessor chips. Scanners without microprocessors are inherently "readily alterable" to receive cellular frequencies. Effective April 26, 1993, the Commission should reject applications for equipment authorization for such scanners and should bar the manufacture or importation of such scanners beginning April 26, 1994. Cf. Notice at Appendix A, Proposed Section 15.37(f).

[14] See Notice at ¶ 8 n.7.

firmware is relied upon to block cellular frequencies, the original chip could itself be returned to the board after the firmware is decoded and rewritten to delete the block.

To prevent these alterations, the Commission's definition of "readily altered" must also require that a scanning receiver's microprocessor chip be difficult to detach from the circuit board.[15/] CTIA strongly supports the Commission's proposal to prohibit the installation of semiconductor chips in sockets from which they can be simply unplugged.[16/] At a minimum, chips should be epoxied onto the circuit board.[17/]

II. The Commission Should Deny Equipment Authorization to Frequency Converters that Do Not Contain a Microprocessor Chip Designed to Block Cellular Frequencies

The Commission correctly concludes that it would be inconsistent with the Act's intent to grant equipment authorization to frequency converters that tune, or can be readily altered to tune, cellular frequencies.[18/] Converters that receive frequencies in the 800 MHz band are widely used to convert cellular transmissions down to lower frequencies so that they

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[15/] In addition, where firmware is relied upon to block cellular frequencies, the Commission should require that the code defeating the receipt of these frequencies be encrypted to further guard against the decoding and rewriting of the chip's firmware.

[16/] Notice at ¶ 8 n.7.

[17/] For example, Part 22 of the Commission's rules requires that the circuitry providing a mobile station's electronic serial number ("ESN") "be isolated from fraudulent contact and tampering." See "Cellular System Mobile Station-Land Station Compatibility Specification," Office of Science and Technology Bulletin No. 53 (April 1981) at ¶ 2.3.2 (adopted by reference at 47 C.F.R. § 22.915(a)). Under CTIA's Certification Program, the chip containing the ESN must be "potted, epoxied, or soldered" to the device that reads the ESN. See CTIA Certification Program, Issue 3 (Feb. 24, 1992) at ¶ 4.2.

[18/] Notice at ¶ 10.

can be picked up by scanners without cellular coverage.[19/] These converters are easy to obtain and are relatively inexpensive. If converters capable of tuning cellular frequencies remain available, scanner users will be able to continue listening to cellular telephone calls regardless of restrictions imposed directly on scanners.

To ensure that converters do not and cannot be altered to tune cellular frequencies, the Commission should require that they contain a microprocessor chip that is designed to block the receipt of such frequencies. We recognize that many converters do not currently include microprocessors and, thus, lack the "brain power" necessary to lock-out certain frequencies, but other components or devices, such as diodes or resistors, have proven ineffective as means of preventing receipt of cellular transmissions. Unless microprocessors are added to converters to defeat cellular coverage, the Commission will have to deny equipment authorization to all converters that tune into the 800 MHz band to make sure that cellular transmissions are not received. Obviously, this latter approach is undesirable, since it could unfairly restrict legitimate converter use.

To further ensure that converters cannot be "readily altered" to receive cellular transmissions, the Commission should also require that the microprocessor chip be difficult to detach from the circuit board in order to prevent its removal and replacement or

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[19/] See, e.g., Monitoring Times, Feb. 1993, at 101 (advertising a "**Super Converter 9001** for base model scanners . . . [that] converts 810 MHz - 950 MHz down to 410 MHz - 550 MHz . . . [as] the perfect alternative to buying a new, expensive scanner covering the 800 MHz band"); Monitoring Times, Jan. 1993, at 106 (informing readers that "No receiver that doesn't have at least part of the 806 - 960 MHz band in it can be modified to include that portion of the spectrum. Your only possibility is to use an external converter.").

reprogramming.[20] Attachment of the chip should be accomplished in the same manner as described above.[21]

III. The Commission Should Require Applicants for Equipment Authorization to Provide a Full and Complete Explanation of How They Have Complied With the Commission's Rules

The Commission should also require applicants for equipment authorization to do more than simply state that they have satisfied the new scanner and/or converter rules.[22] The agency should also instruct applicants to explain why their particular equipment cannot be "readily altered" to receive cellular frequencies.[23] Without such an explanation, the Commission will be unable to determine whether its definition of "readily altered" is being interpreted and implemented correctly. Once again, disputes and confusion could result. If manufacturers interpret the term too narrowly, possible alterations may go undetected and

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[20] As proposed above, requiring encryption of any code defeating cellular coverage would afford additional protection against alterations. See, note 15, supra.

[21] See p. 6, supra.

[22] The Commission did not specifically suggest any reporting requirement for its proposed voice decoder rule. See Notice at ¶ 9. It should be clarified that applicants for authorization of scanning receivers and frequency converters used with scanning receivers are required to pledge that their receivers cannot be equipped with decoders that convert digital cellular transmissions to analog voice audio. Cf. Notice at ¶¶ 6, 8, 10.

[23] See Notice at ¶¶ 8, 10.

The Commission's proposed Sections 2.975(a)(8) and 2.1033(b)(12), Notice at Appendix A, should be revised to add the following underscored language:

> Applications for . . . shall be accompanied by an exhibit indicating compliance with the provisions of Section 15.121 of this Chapter. The exhibit shall contain an explanation of why the receivers are not capable of "readily being altered by the user" as defined in that Section.

unaddressed, unless the Commission "discovers evidence" of them after a grant of equipment authorization has been made.[24/] Such after-the-fact review, if it even occurs, is likely to be seriously contested. In sum, the effectiveness and efficiency of the Commission's enforcement efforts will be significantly hampered by its failure to examine the "readily altered" issue as a threshold matter.

Conclusion

CTIA supports the Commission's interpretation of the mandate of Section 302(d) of the Communications Act, but respectfully suggests that the proposed rules be revised as stated above to prevent disputes and confusion over the meaning of "readily altered."

Respectfully Submitted,

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[24/] See Notice at ¶ 11.